

No.

8300087



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Koninklijk Kweekbedrijf en Zaadhandel

D. J. van der Have B.V.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HERETOUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS OWNED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Piston'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 30th day of November in the year of our Lord one thousand nine hundred and eighty-four.

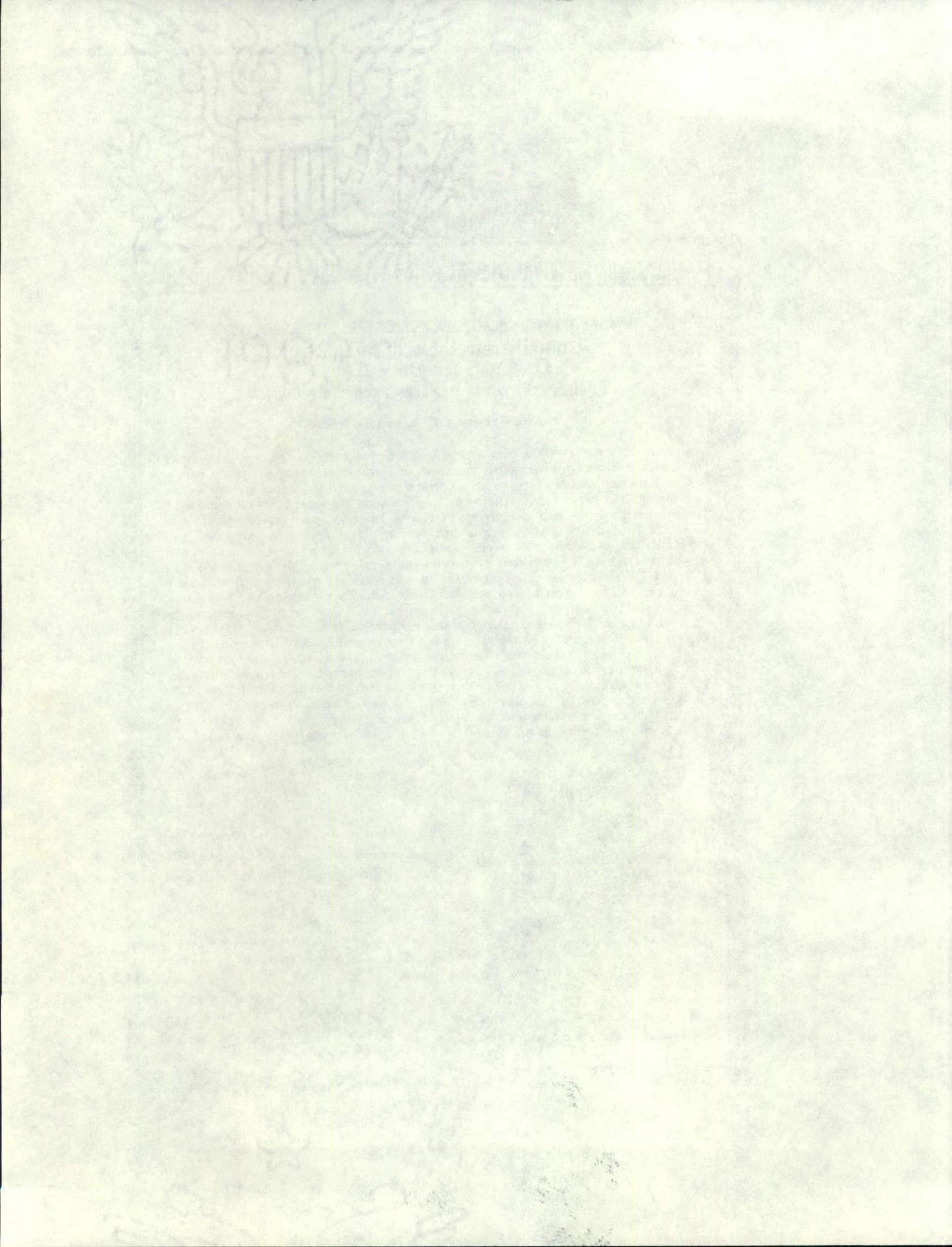
Kenneth H. Evar
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service



Attest.

John R. Block

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

1. NAME OF APPLICANT(S) Koninklijk Kweekbedrijf en Zaadhinkel D.J. van der Have B.V.		2. TEMPORARY DESIGNATION VDH 228-72	3. VARIETY NAME PISTON	FORM APPROVED: OMB NO.0581-0055
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P.O. Box 1, 4420 AA Kapelle, the Netherlands.		5. PHONE (Include area code) 01102 - 1441.	FOR OFFICIAL USE ONLY PVPO NUMBER 8300087	
6. GENUS AND SPECIES NAME Gramineae - Hordeum vulgare (spring barley)	7. FAMILY NAME (Botanical)	FILING DATE 3/4/83 TIME 9:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	AMOUNT FOR FILING \$ 1,000 DATE 3/4/83	
8. KIND NAME Spring barley	9. DATE OF DETERMINATION August 1978	FEES RECEIVED AMOUNT FOR CERTIFICATE \$ 500.00 DATE 10/10/84	12. DATE OF INCORPORATION 8th. March 1973.	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		11. IF INCORPORATED, GIVE STATE OF INCORPORATION Netherlands	13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Western Seed Company, 2300 Ferry St. Suite 10, Albany, OR 97321	
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED				
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)	c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)			
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement	d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No				
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> Foundation <input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified		
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No				
19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No				
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.				
SIGNATURE OF APPLICANT M.E. Roothaan.		DATE Rilland, 10-2-1983.		
SIGNATURE OF APPLICANT		DATE		

INSTRUCTIONS

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (*\$250 filing fee and \$250 examination fee*) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

GPO 890-698



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830087

Exhibit A.

Origin and Breeding History of the spring barley variety PISTON (VDH 228-72).

1. The variety was selected from the cross: zephyr * 66536. The final cross was made in 1967 in the Netherlands.
2. From F 1 to F 5, the progenies originating from the cross were selected according to the pedigree-method without yield trials. In 1972, the variety was selected from several ear-row progenies, drilled on small plots at the Van der Have plant breeding station in Rilland, Netherlands. The variety was given the experimental designation VDH 228-72.

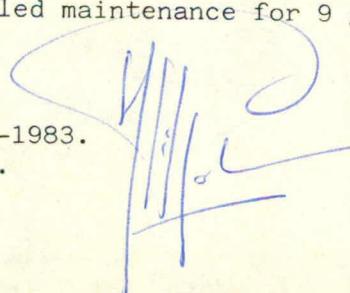
The first yield trials were carried out in the Netherlands in 1970. From 1971 till 1975, replicated yield trials were carried out in the Netherlands and several other European countries.

Based on good results in several European trials with drought stress, the variety was sent for trials in the USA in 1976. After 1978, the variety was not further tested in Europe. No application for grant of plant protection was made in Europe.

The purification and maintenance of the variety started in 1974 by drilling 30 plant progenies. Starting from these plant progenies, the purification and maintenance were continued in the subsequent years following a strict pedigree-system: each year, a number of plant progenies (single rows) and plant progeny plots (12 m^2) were drilled, which were closely examined for uniformity and stability for field characters as well as morphological description characters. After examination for uniformity, plant progeny plots were bulked to produce breeders' seed for further multiplications. All maintenance programs were drilled under isolation with wheat and were harvested with utmost care to avoid any contamination.

3. In the maintenance programs from 1978 onwards, no evidence was found of lack of uniformity or lack of stability of the variety.
4. As evidence for stability of the variety, it can be mentioned that the seed of harvest 1982 originates from F 15 plant generation after controlled maintenance for 9 generations.

Rilland, 10-2-1983.
M.E. Roothaan.





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Exhibit B.Statement of Novelty of the spring barley variety PISTON (VDH 228-72).

Type : two-rowed spring barley

Culm : short

Leaves : during stem elongation fairly slender, semi erect, with anthocyanin coloration in leaf sheaths and auricles.

Ear : medium long, fairly slender, awned with long, rough awns. Medium anthocyanin coloration in awn tips. Ear attitude after heading erect, during ripening semi-recurved. Divergent attitude of sterile, lateral, spikelets. Ear shape slightly tapering, rather dense ear.

Grain : covered, short haired rachilla, without hairs in ventral furrow; spiculation of inner lateral nerves of lemma medium to strong. Strong anthocyanin coloration of lemma nerves.

Other information: white aleurone; DDT-susceptible.

Distinction from other varieties:

The variety which, to our knowledge, most closely resembles the variety Piston, is the spring barley variety Menuet (Plant Variety Protection certificate no. 7800042). Piston can be distinguished from Menuet by the following characters:

- DDT-reaction: Menuet resistant, Piston susceptible.
 - Ear density : Piston has slightly denser ears than Menuet.
 - Sterile spikelets : Piston: more slender sterile spikelets than Menuet.
Piston: more divergent implantation of sterile spikelets than Menuet.
 - Waxiness of ears : Piston: slightly more waxy ears than Menuet.
 - Anthocyanin coloration : Piston: more anthocyanin coloration in auricles of flag leaf and in lemma nerves than Menuet.
 - Awns : Piston: longer awns than Menuet.
- As an additional character can be mentioned that the ears of Menuet show a tendency to lose their awns at ripening; Piston does not show this tendency.

Piston can be distinguished from the older variety Zephyr by the spiculation of the inner lateral nerves of the lemma: Zephyr: non spiculated; Piston: spiculated.



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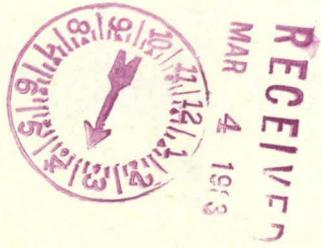
.2.

Regarding field characters: Piston can be distinguished from Menuet by the following characters:

- higher yield than Menuet
- one day later in heading and maturity than Menuet
- less susceptible for powdery mildew than Menuet
- less susceptible for lodging than Menuet
- slightly less attacked by scald than Menuet

To our knowledge, the variety is, by the given combination of characters, distinct from any other two-rowed, barley variety. However, as the variety has not been entered into official trials in any European country, no confirmation of the novelty and distinction of the variety from official testing authorities is available.

Rilland, 10-2-1983.
M.E. Roothaan.



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OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (HORDEUM VULGARE)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)
Koninklijke Kweekbedrijf en Zaadhondel,
D.J. van der Have B.V.
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)
P.O. Box 1, 4420 AA Kapelle, Netherlands.

FOR OFFICIAL USE ONLY
PVPO NUMBER
8300087
VARIETY NAME OR TEMPORARY
DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. **0 8 9** or **0 9**) when number is either 99 or less or 9 or less.

1. GROWTH HABIT: *I eat as per letter d 1/2/83.*
 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER 2 Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE
 3 = ERECT

2. MATURITY (50% Flowering):
 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

No. of days Earlier than } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON

5 No. of days Later than } 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

3. PLANT HEIGHT (From soil level to top of head):
 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

0 9 Cm. Shorter than 5 } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON
 Cm. Taller than } 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

4. STEM:
 Exertion (Flag to spike at maturity): 1 = 0 - 3 cm. 2 = 3 - 10 cm.
 3 = 10 - 15 cm. 2 Anthocyanin: 1 = ABSENT 2 = PRESENT

- - NO. OF NODES (Originating from node above ground)

1 Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 4 = MODIFIED CLOSED OR OPEN 1 Shape of Neck: 1 = STRAIGHT 2 = SNAKY
 3 = OTHER (Specify)

5. LEAF:
 1 Basal leaf sheath (seedling): 1 = GLABROUS 2 = PUBESCENT 1 Position of flag leaf (at boot stage): 1 = DROOPING
 2 = UPRIGHT

2 Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 1 0 MM. WIDTH (First leaf below flag leaf)

- - CM. LENGTH (First leaf below flag leaf) 2 Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD: *EAT as per Telephone Conversation 2/25/83*
 Type: 1 = TWO-ROWED 2 = SIX-ROWED 2 Density: 1 = LAX 2 = ERECT (Not dense)
 3 = ERECT (Dense)

1 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 2 Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY
 4 = OTHER (Specify) 3 = WAXY

0 Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD 3 Rachis (Hair on edge): 1 = LACKING 2 = FEW 3 = COVERED

7. GLUME:
 2 Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA 2 Hairs: 1 = NONE 2 = SHORT 3 = LONG

2 Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED

2 Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES
 3 = MORE THAN EQUAL TO LENGTH OF GLUMES

3 Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

8. LEMMA:

- Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS
 5 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike)
 5 = LONG (longer than spike) 6 = HOODED
- Awn Surface: 0 = AWNLESS 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH
- Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS Hair: 1 = ABSENT 2 = PRESENT
- Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE Rachilla Hairs: 1 = SHORT 2 = LONG
 3 = TRANSVERSE CREASE

9. STIGMA:

- Hairs: 1 = FEW 2 = MANY

10. SEED:

- Type: 1 = NAKED 2 = COVERED Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT
- Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.)
 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)
- Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED
- Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE
- 0 0 PERCENT ABORTIVE 4 5 GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

- | | | | |
|---------------------------------------|---|---|--|
| <input type="checkbox"/> 0 SEPTORIA | <input type="checkbox"/> 0 NET BLOTHC | <input type="checkbox"/> 0 SPOT BLOTHC | <input type="checkbox"/> 2 POWDERY MILDEW |
| <input type="checkbox"/> 1 LOOSE SMUT | <input type="checkbox"/> 0 BACTERIAL BLIGHT | <input type="checkbox"/> 0 COVERED SMUT | <input type="checkbox"/> 0 FALSE LOOSE SMUT |
| <input type="checkbox"/> 0 STEM RUST | <input type="checkbox"/> 2 LEAF RUST | <input type="checkbox"/> 0 SCAB | <input type="checkbox"/> 1 SCALD |
| <input type="checkbox"/> 0 AY | <input type="checkbox"/> 0 BSMV | <input type="checkbox"/> 1 BYDV | <input type="checkbox"/> 0 OTHER (Specify) _____ |

12. INSECT: (0 = Not tested, 1 = Susceptible 2 = Resistant)

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> 0 GREEN BUG | <input type="checkbox"/> 0 ENGLISH GRAIN APHID | <input type="checkbox"/> 0 CHINCH BUG | <input type="checkbox"/> 0 ARMYWORM |
| <input type="checkbox"/> 0 GRASS HOPPERS | <input type="checkbox"/> 0 CERIAL LEAF BETTLE | <input type="checkbox"/> 0 OTHER (Specify) _____ | |
| HESSIAN FLY RACES { | | <input type="checkbox"/> 0 GP <input type="checkbox"/> 0 A | <input type="checkbox"/> 0 B <input type="checkbox"/> 0 C |
| | | <input type="checkbox"/> 0 D <input type="checkbox"/> 0 E | <input type="checkbox"/> 0 F <input type="checkbox"/> 0 G |

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

- 1 DDT 0 OTHER (Specify) _____

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	MENUET	Seed size	-
Leaf size	MENUET	Coleoptile elongation	-
Leaf color	MENUET	Seedling pigmentation	-
Leaf carriage	MENUET		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

- Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
- Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
- Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

Exhibit D.Additional Description of the spring barley variety Piston (VDH 228-72).

The variety Piston has been extensively tested in the USA, mainly in the USDA-trials in Montana and OSU-trials in Oregon.

A summary of the Performance of Piston in these trials (replicated yield trials - about 10 locations annually) over the period 1978-1980, in comparison to the control varieties Ingrid, Menuet, Shabet and Hector is given in enclosure 4a.

A copy of the trial results Montana 1981 is given in enclosure 4b.

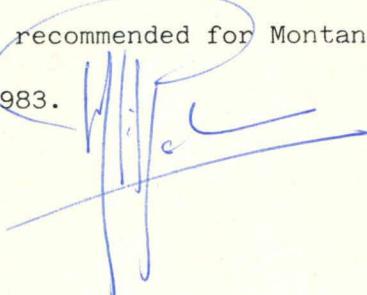
The variety Menuet was tested in the years 1976, 1977, 1979 and 1980 in trials of Oregon State University. A copy of the results of Piston in these trials is given in the enclosures 4c, 4d, 4e and 4f.

The variety Piston can be characterized as a two-rowed spring barley with high test weight and good grading, performing well in irrigated as well as non-irrigated conditions in N.W.-USA.

According to tests, carried out in Europe, the variety has a medium protein content and cannot be regarded as a malting barley.

The variety was recommended for Montana in 1981.

Rilland, 10-2-1983.
M.E. Roothaan.

A handwritten signature in blue ink, appearing to read "M.E. Roothaan". The signature is written over a blue oval outline.



REF -
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1981

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VDH 228-72

Data analyzed from 1978 thru 1980

Characteristic	No. of Sta.Yrs	VDH 22872	vs Ingrid	Diff.	Byx	R ² or C
Yield, q/ha <u>1/</u>	25	41.0	38.1	-2.9**	1.04	0.870**
Test Weight, kg/hl <u>2/</u>	25	67.0	66.4	-0.6	0.64**	0.587**
Heading Date, days fr 1/1	18	183.5	184.7	1.2**	1.04	0.962**
Maturity Date, days fr 1/1	5	217.0	216.6	-0.4	0.68**	0.943**
Plant height, cm	23	67.2	72.6	5.4**	1.01	0.953**
% Plump	16	63.6	71.0	7.4	-0.01*	0.000
% Thin	11	8.2	16.6	8.4	0.20**	0.150
% Lodging <u>3/</u>	7	12.3	34.0	21.7	0.45	0.438
Shattering %	4	3.2	4.9	1.7	0.22*	0.735
Scald 0-9	3	5.0	4.7	-0.3	0.47	0.355
<hr/>						
		VDH 22872 vs Menet				
Yield, q/ha <u>1/</u>	25	41.0	38.6	-2.4**	1.06	0.924**
Test Weight, kg/hl <u>2/</u>	26	67.0	67.7	0.7	0.64**	0.657
Heading Date, days fr 1/1	18	183.5	182.5	-1.0**	1.02	0.975**
Maturity Date, days fr 1/1	5	217.0	216.3	-0.7	0.82	0.979**
Plant height, cm	23	67.2	67.1	-0.1	1.04	0.951**
% Plump	16	63.6	80.6	17.0*	0.03	0.000
% Thin	11	8.2	6.9	-1.3	0.89	0.623
% Lodging <u>3/</u>	5	17.2	42.6	25.4	0.38	0.240
Shattering %	4	3.2	5.1	1.9	0.17**	0.609
Scald 0-9	3	5.0	6.0	1.0	0.33	0.250
<hr/>						
		VDH 22872 vs Shabet				
Yield, q/ha <u>1/</u>	25	41.0	38.8	-2.2	1.01	0.786*
Test Weight, kg/hl <u>2/</u>	25	67.0	63.8	-3.2**	0.48**	0.556*
Heading Date, days fr 1/1	18	183.5	182.6	0.9*	0.95	0.961**
Maturity Date, days fr 1/1	5	217.0	213.9	-3.1	0.62	0.816**
Plant height, cm	23	67.2	74.8	7.6**	1.10	0.904**
% Plump	16	63.6	63.6	0.0	-0.06**	0.003
% Thin	11	8.2	17.1	8.9**	0.44**	0.815**
% Lodging <u>3/</u>	7	12.3	40.7	28.4	0.49	0.384
Shattering %	4	3.2	6.2	3.0	-0.00*	0.000
Scald 0-9	3	5.0	4.3	-0.7	0.69	0.519
<hr/>						
		VDH 22872 vs Hector				
Yield, q/ha <u>1/</u>	25	41.0	40.2	-0.8	1.14	0.825**
Test Weight, kg/hl <u>2/</u>	25	67.0	66.6	-0.4	0.56**	0.506
Heading Date, days fr 1/1	18	183.5	180.9	-2.6**	0.94	0.947**
Maturity Date, days fr 1/1	5	217.0	214.9	-2.1	0.54*	0.869**
Plant height, cm	23	67.2	76.3	9.1**	1.00	0.884**
% Plump	16	63.6	75.8	12.2	0.07	0.002
% Thin	11	8.2	10.1	1.9	0.76	0.820**
% Lodging <u>3/</u>	7	12.3	34.3	22.0*	0.70	0.663
Shattering %	4	3.2	8.2	5.0	0.10**	0.627
Scald 0-9	3	5.0	3.7	-1.3	0.86	0.429

1/ Multiply q/ha by 1.58 to obtain Bu/A

2/ Multiply kg/ha by 0.7482 to obtain lbs/bu

3/ Lodging prevalence x severity + 9 = % lodging

* Significant at the 5% level ** Significant at the 1% level



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Enclosure 4b.

21-24 BOZEMAN & INTRASTATE 1981

LOCATION NUMBER	LOCATION NAME
MT04	SIDNEY IRR
MT02	HAVRE
MT03	SIDNEY DRY
MT05	KALISPELL DRY
MT06	KALISPELL IRR
MT07	MOCCASIN
MT08	HUNTLEY DRY
MT09	HUNTLEY IRR
MT18	CONRAD
MT01	BOZEMAN IRR
MT47	BOZEMAN DRY

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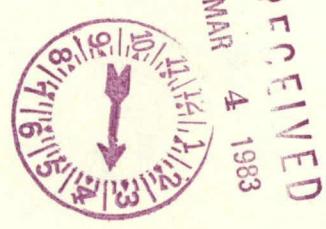


P R E R E V E D
MAR 4 1983

TABLE 21-24 BOZEMAN & INTRASTATE 1981

D. NO	VARIETY NAME	MT04	MT05	MT06	MT03	MT18	MT01	MT09	MT47	MT08	MT07	MT02
*** YIELD (Q/HEC) ***												
A 9	NA 9	73.7	66.2	68.0	48.3	46.7	55.5	51.4	49.3	29.1	30.7	27.3
I 15229	STEPTOE	73.0	70.5	50.9	51.0	49.1	48.3	38.5	47.2	33.0	27.9	28.0
T 312620	SUMMIT/HECT	66.3	49.5	47.5	51.2	47.0	38.7	33.6	42.9	30.2	34.2	28.2
I 15860	KARLA	69.7	42.3	51.2	43.8	42.9	48.8	37.4	35.1	31.6	26.9	22.5
T 729	SUMMIT	69.7	41.4	35.9	44.0	47.7	45.4	41.1	39.7	31.1	30.5	22.0
T 657399	STEPTOE/KLA	61.2	48.0	45.8	43.2	42.4	41.5	35.4	47.6	24.4	33.0	23.3
I 10421	UNITAN	64.1	48.4	41.1	47.3	46.8	47.3	33.8	35.7	28.8	26.7	24.5
D 22872	VDH 228-72	58.0	47.3	45.8	45.4	45.4	46.4	42.8	38.0	28.1	27.3	18.3
D 3	MENUET	60.1	46.0	50.8	42.1	43.2	41.7	42.8	35.0	34.0	23.0	19.8
D 8477	VDH 084-77	63.2	43.5	49.8	40.7	38.5	46.8	47.1	35.3	25.6	26.6	19.5
T 547354	HECTOR/KLAG	64.1	49.3	41.3	46.3	41.4	44.1	30.7	36.6	31.5	27.2	22.4
D 11874	VDH 118-74	59.6	50.7	45.9	43.1	43.2	43.8	39.3	34.1	26.5	27.7	20.7
A 12	NA 12	61.0	49.0	41.1	44.0	43.7	38.4	34.9	37.9	31.5	27.4	22.7
I 15514	HECTOR	54.9	48.7	41.2	45.6	43.0	35.3	32.0	38.2	34.4	33.4	21.8
I 15857	CLARK	59.2	44.5	33.8	46.5	45.5	40.3	32.7	38.4	33.1	25.1	24.2
T 31972	KLAGES/SUMM	62.8	44.5	45.1	39.8	38.1	41.7	42.6	30.8	30.8	27.4	18.1
A 13	NA 13	63.9	42.2	40.1	40.0	47.1	30.6	44.0	36.3	28.8	26.0	19.5
E 9	WE 9	54.8	46.5	55.0	41.3	36.3	29.7	40.2	33.3	27.0	30.9	20.0
T 853183	BZ AWN BYT/	61.0	43.6	40.0	41.3	37.6	35.9	42.3	38.2	28.5	24.2	20.3
E 83	ONDA	65.4	43.8	59.3	40.1	36.9	30.4	36.2	25.9	25.1	27.9	20.6
D 11576	VDH 115-76	53.3	42.3	44.4	42.9	41.0	34.4	37.2	34.0	26.7	29.9	22.9
D 13875	VDH 138-75	57.3	45.0	38.7	41.2	40.8	37.4	32.8	33.5	23.8	34.4	20.7
I 13827	SHABET	53.8	45.3	40.5	44.5	42.1	35.6	34.5	39.2	26.0	22.8	20.5
I 15773	MOREX	68.0	43.0	35.0	46.3	35.8	46.3	28.2	29.4	27.4	23.1	22.1
D 43277	VDH 432-77	58.5	40.7	38.6	39.9	42.8	42.8	37.8	33.6	21.2	24.2	22.4
T 73708	SCASHABET	51.9	44.7	37.3	43.3	42.9	39.3	28.0	37.4	28.0	26.4	19.5
I 5438	COMPANA	48.2	44.7	28.0	45.8	41.0	29.2	31.4	40.2	30.0	25.8	22.9
E 14	HV 14	51.1	39.1	45.9	40.6	38.6	34.7	31.9	30.3	25.6	28.9	20.1
EXPERIMENTAL MEANS		61.0	46.8	44.2	43.9	42.4	40.4	37.2	36.9	28.6	27.8	22.0

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MAR 4 1983

ABLE 21,24 BOZEMAN & INTRASTATE 1981

D.	NO	VARIETY NAME	AVE.	BYX	C.D.	R	T
*** YIELD (Q/HEC) ***							
A	9	NA 9	49.7	1.36	84	.91	1.79
I	15229	STEPTOE	47.0	1.32	88	.94	1.92
T	312620	SUMMIT/HECT	42.7	1.00	90	.95	-.03
I	15860	KARLA	41.1	1.15	90	.95	1.22
T	729	SUMMIT	40.8	1.05	84	.92	.34
T	657399	STEPTOE/KLA	40.5	.97	88	.94	-.28
I	10421	UNITAN	40.4	1.07	93	.96	.71
D	22872	VDH 228-72	40.3	1.03	93	.96	.29
D	3	MENUET	39.9	1.03	90	.95	.24
D	8477	VDH 084-77	39.7	1.09	86	.93	.62
T	547354	HECTOR/KLAG	39.5	1.06	93	.97	.63
D	11874	VDH 118-74	39.5	1.05	96	.98	.75
A	12	NA 12	39.2	.97	97	.98	-.49
I	15514	HECTOR	39.0	.79	86	.93	-1.99
I	15857	CLARK	38.5	.88	84	.92	-.94
T	31972	KLAGES/SUMM	38.3	1.04	91	.95	.37
A	13	NA 13	38.0	1.04	85	.92	.25
E	9	WE 9	37.7	.90	75	.86	-.55
T	853183	BZ AWN BYT/	37.5	.98	92	.96	-.19
E	83	ONDA	37.4	1.17	77	.88	.77
D	11576	VDH 115-76	37.2	.80	94	.97	-3.07
D	13875	VDH 138-75	36.9	.89	91	.95	-1.20
I	13827	SHABET	36.8	.93	93	.97	-.86
I	15773	MOREX	36.8	1.15	83	.91	.89
D	43277	VDH 432-77	36.6	.98	91	.96	-.22
T	73708	SCASHABET	36.2	.85	88	.94	-1.44
I	5438	COMPANA	35.2	.66	62	.79	-1.98
E	14	HV 14	35.2	.80	90	.95	-2.21
XPERIMENTAL MEANS		39.2	1.00	100	1.00	0.00	

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MAR 4 1983

LE 21,24 BOZEMAN & INTRASTATE 1981

• NO VARIETY NAME	MT04	MT05	MT06	MT03	MT18	MT01	MT09	MT47	MT08	MT07	MT02
	*** TEST WEIGHT (KG/HL) ***										
9 NA 9	61.5	64.8	63.0	54.1	64.4	65.0	64.7	66.4	61.0	59.7	54.4
15229 STEPTOE	59.5	64.7	62.0	52.1	64.8	63.6	62.1	65.8	59.0	57.3	49.7
12620 SUMMIT/HECT	66.2	70.4	61.4	62.1	69.9	69.2	67.1	71.5	63.7	67.6	65.6
15860 KARLA	63.5	67.7	64.6	56.1	66.4	65.9	61.2	68.7	62.9	67.9	55.2
729 SUMMIT	68.2	70.0	66.4	60.8	70.3	69.5	70.1	71.4	66.4	69.9	63.4
57399 STEPTOE/KLA	65.5	68.6	66.7	62.8	65.5	66.8	66.3	67.0	62.4	68.0	61.2
10421 UNITAN	61.5	61.5	61.8	54.1	64.8	63.8	66.2	67.5	59.9	58.9	53.5
22872 VDH 228-72	66.8	70.2	68.5	61.5	69.5	67.8	69.2	70.0	66.1	66.8	61.1
3 MENUET	66.8	70.4	69.6	60.8	71.5	70.0	69.9	71.5	65.4	66.0	60.7
8477 VDH 084-77	69.5	70.6	67.5	60.1	67.1	68.2	71.9	70.2	66.7	69.5	63.1
47354 HECTOR/KLAG	66.8	70.3	64.9	60.1	67.8	68.6	66.3	69.8	64.5	66.2	62.5
11874 VDH 118-74	66.8	70.9	65.7	60.1	70.0	68.4	67.8	70.2	65.4	68.6	62.8
12 NA 12	66.2	68.7	64.2	58.8	69.4	66.2	67.0	68.4	66.6	67.9	63.9
15514 HECTOR	64.2	70.2	58.8	60.1	70.7	68.0	67.2	71.6	64.7	69.4	64.3
15857 CLARK	64.8	69.6	64.4	59.5	68.0	68.3	67.9	70.6	63.6	68.3	63.1
31972 KLAGES/SUMM	67.5	70.8	67.3	57.5	68.7	69.5	67.1	69.1	73.2	67.9	62.1
13 NA 13	66.2	69.9	63.9	56.1	69.6	66.3	67.4	70.0	66.0	67.6	60.1
9 WE 9	61.5	62.8	63.4	54.8	63.5	61.5	63.0	60.3	66.6	61.1	55.2
53183 BZ AWN BYT/	62.8	68.9	67.4	54.8	68.0	67.5	67.7	69.5	60.8	67.1	59.5
83 ONDA	59.5	60.5	63.4	51.5	63.5	60.5	62.1	61.6	57.0	56.0	52.7
11576 VDH 115-76	62.8	68.3	66.5	56.1	69.0	65.8	69.0	69.0	63.4	64.2	58.9
13875 VDH 138-75	65.5	68.9	62.8	56.8	66.7	65.6	67.1	68.4	62.1	66.3	61.5
13827 SHABET	62.8	68.4	61.4	56.8	69.4	66.3	66.4	68.7	61.9	66.2	57.1
15773 MOREX	60.8	67.9	64.5	58.1	68.3	68.8	66.6	69.0	62.2	64.7	57.9
43277 VDH 432-77	67.5	68.4	64.6	57.5	69.9	68.4	69.5	68.6	62.7	65.2	61.3
73708 SCASHABET	62.8	67.9	63.6	56.8	69.2	65.5	68.5	69.2	64.2	67.2	59.1
5438 COMPANA	62.8	66.3	61.0	59.5	66.7	64.4	64.2	68.0	62.8	66.7	57.6
14 HV 14	68.2	71.8	68.8	65.5	73.0	69.4	68.8	71.9	67.1	70.3	66.6
PERIMENTAL MEANS	64.6	68.2	64.6	58.0	68.1	66.7	66.9	68.7	63.9	65.8	59.8

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MAR 4 1983

TABLE 21-24 BOZEMAN & INTRASTATE 1981

D.	NO	VARIETY NAME	AVE.	BYX	C.D.	R	T
				*** TEST WEIGHT (KG/HL) ***			
A	9	NA 9	61.7	1.16	90	.95	1.24
I	15229	STEPTOE	60.1	1.43	87	.93	2.32
F	312620	SUMMIT/HECT	66.8	.75	59	.77	-1.17
I	15860	KARLA	63.6	1.19	80	.89	.94
F	729	SUMMIT	67.9	.94	95	.98	-.88
F	657399	STEPTOE/KLA	65.5	.56	64	.80	-3.17
I	10421	UNITAN	61.2	1.17	80	.90	.89
D	22872	VDH 228-72	67.0	.88	92	.96	-1.40
D	3	MENUET	67.5	1.09	89	.95	.69
D	8477	VDH 084-77	67.7	.89	77	.88	-.72
F	547354	HECTOR/KLAG	66.2	.85	90	.95	-1.62
D	11874	VDH 118-74	67.0	.94	96	.98	-.89
A	12	NA 12	66.1	.79	82	.91	-1.73
I	15514	HECTOR	66.3	.95	59	.77	-.18
I	15857	CLARK	66.2	.92	88	.94	-.70
F	31972	KLAGES/SUMM	67.3	.97	62	.79	-.11
I	13	NA 13	65.7	1.22	94	.97	2.13
E	9	WE 9	61.2	.69	46	.67	-1.24
F	853183	BZ AWN BYT/	64.9	1.31	89	.95	2.03
E	83	ONDA	58.9	1.01	71	.85	.07
D	11576	VDH 115-76	64.8	1.20	92	.96	1.69
D	13875	VDH 138-75	64.7	.98	89	.94	-.15
I	13827	SHABET	64.1	1.26	94	.97	2.47
I	15773	MOREX	64.4	1.14	88	.94	.98
D	43277	VDH 432-77	65.8	1.08	88	.94	.57
F	73708	SCASHABET	64.9	1.16	94	.97	1.63
I	5438	COMPANA	63.6	.86	81	.90	-1.00
E	14	HV 14	69.2	.62	80	.90	-3.75
		(PERIMENTAL MEANS	65.0	1.00	100	1.00	0.00

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21,24 BOZEMAN & INTRASTATE 1981

JO VARIETY NAME	MT04	MT05	MT06	MT03	MT01	MT09	MT47	MT08	MT07	AVE.	BYX	C.D.	R
*** HEADING DATE ***													
9 NA 9	164.0	173.0	176.0	164.0	182.0	161.0	190.0	165.0	180.0	172.8	.89	100	1.00
229 STEPTOE	162.0	172.0	178.0	163.0	182.0	160.0	190.0	165.0	180.0	172.4	.93	99	.99
520 SUMMIT/HECT	163.0	175.0	175.0	164.0	184.0	160.0	192.0	168.0	182.0	173.7	.96	99	.99
360 KARLA	166.0	176.0	178.0	168.0	184.0	162.0	193.0	168.0	185.0	175.6	.92	99	1.00
729 SUMMIT	168.0	164.0	180.0	168.0	187.0	166.0	196.0	170.0	185.0	176.0	.92	84	.91
399 STEPTOE/KLA	167.0	177.0	180.0	167.0	189.0	162.0	197.0	170.0	186.0	177.2	1.04	99	1.00
421 UNITAN	164.0	174.0	178.0	165.0	183.0	161.0	192.0	165.0	181.0	173.7	.94	100	1.00
872 VDH 228-72	169.0	180.0	180.0	169.0	189.0	166.0	196.0	171.0	186.0	178.4	.92	99	1.00
3 MENUET	167.0	179.0	181.0	168.0	186.0	163.0	196.0	168.0	184.0	176.9	.97	99	1.00
477 VDH 084-77	170.0	182.0	182.0	173.0	192.0	166.0	202.0	172.0	189.0	180.9	1.05	99	1.00
354 HECTOR/KLAG	164.0	175.0	178.0	164.0	185.0	162.0	196.0	163.0	183.0	174.4	1.07	99	1.00
874 VDH 118-74	169.0	179.0	182.0	171.0	191.0	164.0	197.0	171.0	187.0	179.0	.98	99	.99
12 NA 12	166.0	178.0	180.0	166.0	187.0	163.0	197.0	169.0	186.0	176.9	1.04	100	1.00
514 HECTOR	164.0	176.0	177.0	166.0	184.0	162.0	196.0	165.0	184.0	174.9	1.03	99	1.00
857 CLARK	165.0	176.0	177.0	165.0	185.0	160.0	197.0	165.0	184.0	174.9	1.08	100	1.00
972 KLAGES/SUMM	168.0	178.0	179.0	168.0	188.0	161.0	197.0	166.0	186.0	176.8	1.06	99	.99
13 NA 13	165.0	178.0	179.0	167.0	186.0	163.0	198.0	168.0	184.0	176.4	1.04	99	1.00
9 WE 9	161.0	166.0	173.0	161.0	179.0	158.0	190.0	157.0	178.0	169.2	1.00	97	.98
183 BZ AWN BYT/	169.0	177.0	179.0	170.0	185.0	164.0	196.0	167.0	189.0	177.3	.96	97	.98
83 ONDA	160.0	168.0	172.0	160.0	180.0	159.0	184.0	160.0	175.0	168.7	.84	98	.99
576 VDH 115-76	166.0	179.0	180.0	166.0	188.0	164.0	197.0	170.0	184.0	177.1	1.01	99	.99
875 VDH 138-75	168.0	180.0	181.0	169.0	188.0	164.0	198.0	172.0	186.0	178.4	.98	99	1.00
827 SHABET	167.0	178.0	180.0	169.0	187.0	164.0	196.0	168.0	185.0	177.1	.97	100	1.00
773 MOREX	164.0	175.0	177.0	164.0	183.0	160.0	190.0	164.0	180.0	173.0	.92	99	.99
277 VDH 432-77	167.0	181.0	183.0	169.0	191.0	164.0	199.0	174.0	187.0	179.4	1.04	98	.99
708 SCASHABET	167.0	179.0	182.0	168.0	188.0	164.0	197.0	168.0	186.0	177.7	1.02	99	1.00
438 COMPANA	163.0	174.0	178.0	164.0	184.0	160.0	193.0	163.0	183.0	173.6			
14 HV 14	161.0	172.0	174.0	163.0	181.0	161.0	190.0	165.0	179.0	171.8	.90	99	1.00
IMENTAL MEANS	165.5	175.8	178.5	166.4	185.6	162.3	195.6	167.0	183.7	175.6	1.00	100	1.00

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21,24 BOZEMAN & INTRASTATE 1981

NO VARIETY NAME	MT04	MT18	AVE.	BYX	C.D.	R	T
	*** MATURITY DATE ***						
9 NA 9	210.0	223.0	216.5	.85	100	1.00	.00
229 STEPTOE	209.0	221.0	215.0	.78	100	1.00	.00
620 SUMMIT/HECT	209.0	222.0	215.5	.85	100	1.00	.00
860 KARLA	210.0	228.0	219.0	1.17	100	1.00	.00
729 SUMMIT	210.0	224.0	217.0	.91	100	1.00	.00
399 STEPTOE/KLA	209.0	228.0	218.5	1.24	100	1.00	.00
421 UNITAN	209.0	221.0	215.0	.78	100	1.00	.00
872 VDH 228-72	209.0	224.0	216.5	.98	100	1.00	.00
3 MENUET	209.0	226.0	217.5	1.11	100	1.00	.00
477 VDH 084-77	212.0	230.0	221.0	1.17	100	1.00	.00
354 HECTOR/KLAG	209.0	228.0	218.5	1.24	100	1.00	.00
874 VDH 118-74	209.0	227.0	218.0	1.17	100	1.00	.00
12 NA 12	209.0	223.0	216.0	.91	100	1.00	.00
514 HECTOR	209.0	225.0	217.0	1.04	100	1.00	.00
857 CLARK	209.0	224.0	216.5	.98	100	1.00	.00
972 KLAGES/SUMM	209.0	228.0	218.5	1.24	100	1.00	.00
13 NA 13	209.0	223.0	216.0	.91	100	1.00	.00
9 WE 9	209.0	229.0	219.0	1.31	100	1.00	.00
183 BZ AWN BYT/	209.0	223.0	216.0	.91	100	1.00	.00
83 ONDA	209.0	218.0	213.5	.59	100	1.00	.00
576 VDH 115-76	209.0	228.0	218.5	1.24	100	1.00	.00
875 VDH 138-75	209.0	227.0	218.0	1.17	100	1.00	.00
827 SHABET	209.0	223.0	216.0	.91	100	1.00	.00
773 MOREX	209.0	221.0	215.0	.78	100	1.00	.00
277 VDH 432-77	209.0	227.0	218.0	1.17	100	1.00	.00
708 SCASHABET	209.0	225.0	217.0	1.04	100	1.00	.00
438 COMPANA	209.0	220.0	214.5	.72	100	1.00	.00
14 HV 14	209.0	221.0	215.0	.78	100	1.00	.00
IMENTAL MEANS	209.2	224.5	216.9	1.00	100	1.00	0.00

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MAR 4 1983

LE 21,24 BOZEMAN & INTRASTATE 1981

NO	VARIETY NAME	MT04	MT05	MT06	MT03	MT18	MT01	MT09	MT47	MT08	MT07	MT02
*** PLANT HEIGHT (CM) ***												
9 NA 9		91.0	99.0	112.0	83.0	71.0	95.0	95.0	76.0	79.0	66.0	82.0
15229 STEPTOE		85.0	99.0	105.0	77.0	64.0	93.0	96.0	76.0	77.0	61.0	83.0
12620 SUMMIT/HECT		79.0	98.0	108.0	78.0	67.0	88.0	90.0	77.0	72.0	65.0	79.0
15860 KARLA		93.0	107.0	124.0	87.0	69.0	94.0	104.0	78.0	83.0	63.0	87.0
729 SUMMIT		95.0	97.0	112.0	83.0	64.0	94.0	97.0	77.0	77.0	73.0	78.0
57399 STEPTOE/KLA		97.0	101.0	114.0	89.0	69.0	92.0	93.0	80.0	80.0	62.0	83.0
10421 UNITAN		92.0	108.0	119.0	86.0	76.0	106.0	93.0	80.0	83.0	76.0	92.0
22872 VDH 228-72		90.0	95.0	101.0	76.0	59.0	85.0	96.0	69.0	79.0	62.0	67.0
3 MENUET		85.0	95.0	107.0	74.0	59.0	83.0	91.0	68.0	69.0	61.0	69.0
8477 VDH 084-77		93.0	98.0	110.0	77.0	61.0	85.0	93.0	70.0	77.0	58.0	73.0
47354 HECTOR/KLAG		92.0	106.0	110.0	80.0	69.0	93.0	98.0	76.0	80.0	65.0	80.0
11874 VDH 118-74		88.0	100.0	107.0	79.0	59.0	88.0	95.0	70.0	76.0	59.0	74.0
12 NA 12		83.0	92.0	105.0	80.0	64.0	87.0	90.0	72.0	75.0	63.0	73.0
15514 HECTOR		82.0	105.0	114.0	85.0	69.0	101.0	97.0	81.0	84.0	73.0	88.0
15857 CLARK		84.0	102.0	111.0	79.0	69.0	93.0	100.0	77.0	84.0	70.0	79.0
31972 KLAGES/SUMM		90.0	106.0	110.0	81.0	69.0	89.0	93.0	77.0	86.0	68.0	77.0
13 NA 13		88.0	93.0	108.0	81.0	64.0	93.0	99.0	74.0	78.0	63.0	72.0
9 WE 9		76.0	95.0	109.0	71.0	66.0	80.0	97.0	61.0	69.0	62.0	72.0
553183 BZ AWN BYT/		71.0	95.0	92.0	73.0	56.0	73.0	92.0	62.0	70.0	55.0	68.0
83 ONDA		87.0	103.0	112.0	81.0	74.0	94.0	99.0	74.0	78.0	75.0	82.0
11576 VDH 115-76		82.0	92.0	104.0	79.0	64.0	86.0	93.0	70.0	68.0	59.0	74.0
13875 VDH 138-75		87.0	92.0	106.0	80.0	61.0	83.0	95.0	74.0	74.0	65.0	75.0
13827 SHABET		86.0	104.0	105.0	85.0	69.0	96.0	95.0	79.0	83.0	65.0	79.0
15773 MOREX		98.0	123.0	121.0	90.0	71.0	103.0	110.0	79.0	95.0	80.0	89.0
43277 VDH 432-77		87.0	95.0	106.0	81.0	64.0	85.0	94.0	71.0	69.0	64.0	74.0
73708 SCASHABET		98.0	114.0	103.0	91.0	68.0	98.0	93.0	85.0	86.0	75.0	85.0
5438 COMPANA		67.0	95.0	99.0	76.0	69.0	92.0	93.0	74.0	76.0	68.0	74.0
14 HV 14		84.0	97.0	112.0	79.0	71.0	92.0	98.0	77.0	78.0	74.0	80.0
XPERIMENTAL MEANS		86.8	100.2	108.8	80.8	66.3	90.8	95.7	74.4	78.0	66.1	78.1

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ABLE 21-24 BOZEMAN & INTRASTATE 1981

D. NO	VARIETY NAME	AVE.	BYX	C.D.	R	T
			*** PLANT HEIGHT (CM) ***			
9	NA 9	86.3	.98	98	.99	-.47
15229	STEPTOE	83.3	1.00	96	.98	.06
312620	SUMMIT/HECT	81.9	.93	95	.97	-.98
15860	KARLA	89.9	1.26	97	.99	3.71
729	SUMMIT	86.1	.99	94	.97	-.15
657399	STEPTOE/KLA	87.3	1.02	91	.96	.23
10421	UNITAN	91.9	.96	88	.94	-.36
22872	VDH 228-72	79.9	1.02	92	.96	.17
3	MENUET	78.3	1.10	98	.99	1.86
8477	VDH 084-77	81.4	1.15	96	.98	1.80
547354	HECTOR/KLAG	86.3	1.06	98	.99	1.29
11874	VDH 118-74	81.4	1.15	99	.99	3.34
12	NA 12	80.4	.92	98	.99	-2.04
15514	HECTOR	89.0	.96	91	.95	-.39
15857	CLARK	86.2	.98	97	.98	-.36
31972	KLAGES/SUMM	86.0	.97	95	.97	-.44
13	NA 13	83.0	1.03	95	.97	.39
9	WE 9	78.0	1.09	90	.95	.78
853183	BZ AWN BYT/	73.4	.97	89	.95	-.26
83	ONDA	87.2	.93	95	.97	-1.02
11576	VDH 115-76	79.2	.99	97	.98	-.17
13875	VDH 138-75	81.1	.95	95	.98	-.72
13827	SHABET	86.0	.93	95	.98	-1.00
15773	MOREX	96.3	1.19	93	.96	1.76
43277	VDH 432-77	80.9	.99	96	.98	-.15
73708	SCASHABET	90.5	.84	80	.90	-1.14
5438	COMPANA	80.3	.77	78	.88	-1.66
14	HV 14	85.6	.89	94	.97	-1.50
XPERIMENTAL MEANS		84.2	1.00	100	1.00	0.00

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ABLE 21,24 BOZEMAN & INTRASTATE 1981

D.	NO	VARIETY NAME	MT05	MT06	MT01	AVE.	BYX	C.D.	R	T
*** LODGING PREV ***										
A	9	NA 9	.0	51.0	91.0	47.3	1.16	38	.62	.11
I	15229	STEPTOE	.0	49.0	65.0	38.0	1.08	59	.77	.09
T	312620	SUMMIT/HECT	37.0	65.0	43.0	48.3	.56	86	.93	-1.88
I	15860	KARLA	.0	11.0	35.0	15.3	.28	14	.37	-1.05
T	729	SUMMIT	.0	99.0	14.0	37.7	1.98	80	.89	.99
T	657399	STEPTOE/KLA	.0	49.0	11.0	20.0	.99	86	.93	-.03
I	10421	UNITAN	.0	49.0	88.0	45.7	1.12	38	.61	.08
D	22872	VDH 228-72	23.0	45.0	19.0	29.0	.43	55	.74	-1.46
D	3	MENUET	.0	18.0	9.0	9.0	.37	100	1.00	-23.93
D	8477	VDH 084-77	.0	41.0	6.0	15.7	.82	80	.90	-.64
T	547354	HECTOR/KLAG	54.0	87.0	74.0	71.7	.69	100	1.00	-8.84
D	11874	VDH 118-74	.0	76.0	36.0	37.3	1.57	99	.99	3.57
A	12	NA 12	.0	40.0	70.0	36.7	.91	39	.63	-.08
I	15514	HECTOR	74.0	99.0	73.0	82.0	.49	65	.81	-1.41
I	15857	CLARK	5.0	99.0	44.0	49.3	1.93	97	.99	2.83
T	31972	KLAGES/SUMM	20.0	70.0	16.0	35.3	.98	62	.79	-.02
A	13	NA 13	.0	80.0	79.0	53.0	1.72	82	.90	.88
E	9	WE 9	.0	99.0	39.0	46.0	2.03	96	.98	2.60
T	853183	BZ AWN BYT/	5.0	98.0	16.0	39.7	1.86	78	.88	.88
E	83	ONDA	96.0	60.0	63.0	73.0	-.77	86	-.93	-5.80
D	11576	VDH 115-76	21.0	82.0	35.0	46.0	1.23	87	.93	.48
D	13875	VDH 138-75	.0	82.0	44.0	42.0	1.70	100	1.00	14.54
I	13827	SHABET	74.0	93.0	85.0	84.0	.39	100	1.00	-75.06
I	15773	MOREX	8.0	48.0	68.0	41.3	.89	50	.71	-.12
D	43277	VDH 432-77	.0	93.0	3.0	32.0	1.85	71	.84	.72
T	73708	SCASHABET	80.0	69.0	66.0	71.7	-.24	63	-.79	-6.65
I	5438	COMPANA	70.0	93.0	94.0	85.7	.50	78	.88	-1.90
E	14	HV 14	20.0	91.0	58.0	56.3	1.47	100	1.00	10.71
XPERIMENTAL MEANS			21.0	69.1	48.0	46.0	1.00	100	1.00	0.00

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TABLE 21,24 BOZEMAN & INTRASTATE 1981

I.D.	NO VARIETY NAME	MT05	MT06	MT01	AVE.	BYX	C.D.	R	T
*** LODGING SEV ***									
NA 9	NA 9	.0	4.8	5.3	3.4	1.28	85	.92	.53
CI 15229	STEPTOE	.0	4.8	4.3	3.0	1.22	96	.98	.85
MT312620	SUMMIT/HECT	1.0	4.8	4.0	3.3	.94	99	.99	-.55
CI 15860	KARLA	.0	1.5	4.0	1.8	.54	32	.56	-.58
MT 729	SUMMIT	.0	5.0	2.0	2.3	1.13	89	.95	.33
MT657399	STEPTOE/KLA	.0	4.5	1.5	2.0	1.00	84	.92	.00
CI 10421	UNITAN	.0	6.8	5.8	4.2	1.72	97	.99	2.42
VD 22872	VDH 228-72	.5	3.5	1.8	1.9	.68	92	.96	-1.54
VD 3	MENUET	.0	1.8	1.5	1.1	.45	98	.99	-7.96
VD 8477	VDH 084-77	.0	2.8	1.0	1.3	.63	86	.93	-1.50
MT547354	HECTOR/KLAG	1.5	5.8	4.3	3.9	1.03	100	1.00	.76
VD 11874	VDH 118-74	.0	4.8	3.3	2.7	1.16	100	1.00	44.69
NA 12	NA 12	.0	6.3	4.5	3.6	1.54	100	1.00	13.37
CI 15514	HECTOR	2.0	4.0	5.8	3.9	.63	48	.70	-.57
CI 15857	CLARK	.3	6.3	4.0	3.5	1.43	99	1.00	3.64
MT 31972	KLAGES/SUMM	1.8	3.5	1.3	2.2	.31	33	.57	-1.53
NA 13	NA 13	.0	6.8	5.8	4.2	1.72	97	.99	2.42
WE 9	WE 9	.0	4.0	2.8	2.3	.97	100	1.00	-2.56
MT853183	BZ AWN BYT/	.3	4.0	2.3	2.2	.87	97	.99	-.90
WE 83	ONDA	3.8	3.8	4.0	3.9	.01	5	.21	-18.47
VD 11576	VDH 115-76	1.5	4.8	3.5	3.3	.79	99	1.00	-2.89
VD 13875	VDH 138-75	.0	7.8	3.0	3.6	1.75	88	.94	1.18
CI 13827	SHABET	2.5	6.3	5.8	4.9	.96	97	.98	-.21
CI 15773	MOREX	.5	5.8	4.0	3.4	1.28	100	1.00	6.53
VD 43277	VDH 432-77	.0	6.0	.5	2.2	1.24	62	.79	.25
MT 73708	SCASHABET	5.0	7.3	6.0	6.1	.52	92	.96	-3.03
CI 5438	COMPANA	3.3	7.5	8.3	6.6	1.14	81	.90	.26
WE 14	HV 14	.3	4.5	3.5	2.8	1.04	99	1.00	.47
EXPERIMENTAL MEANS		.9	5.0	3.7	3.2	1.00	100	1.00	0.00

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TABLE 21-24 BOZEMAN & INTRASTATE 1981

I.D.	NO	VARIETY NAME	MT04	MT05	MT06	MT03	MT18	MT01	MT47	MT07	AVE.	BYX	C.D.	R	T
*** % PLUMP ***															
NA	9	NA 9	96.0	94.0	79.5	24.0	93.0	94.3	94.6	66.0	80.2	1.33	88	.94	
CI	15229	STEPTOE	94.0	91.5	68.3	37.0	96.0	91.0	93.0	66.0	79.6	1.17	97	.98	
MT	312620	SUMMIT/HECT	74.0	81.0	73.8	42.0	91.0	73.3	82.5	48.0	70.7	.88	83	.91	
CI	15860	KARLA	78.0	85.0	59.5	29.0	94.0	76.2	80.1	70.0	71.5	1.07	88	.94	
MT	729	SUMMIT	82.0	77.5	40.3	26.0	95.0	78.8	76.4	58.0	66.8	1.27	91	.95	
MT	657399	STEPTOE/KLA	96.0	94.5	77.3	87.0	97.0	97.2	96.0	87.0	91.5	.29	52	.72	-
CI	10421	UNITAN	88.0	89.8	81.8	42.0	92.0	86.5	83.7	56.0	77.5	.98	88	.94	
VD	22872	VDH 228-72	83.0	82.5	65.3	48.0	96.0	76.1	76.6	55.0	72.8	.87	93	.97	-
VD	3	MENUET	88.0	86.5	76.3	27.0	97.0	89.3	85.6	35.0	73.1	1.42	87	.93	
VD	8477	VDH 084-77	97.0	90.3	72.3	42.0	98.0	85.0	77.8	72.0	79.3	.98	90	.95	
MT	547354	HECTOR/KLAG	92.0	87.3	59.3	67.0	97.0	90.3	87.4	61.0	80.2	.75	75	.86	-
VD	11874	VDH 118-74	78.0	91.0	56.8	29.0	95.0	84.8	73.5	53.0	70.1	1.25	97	.98	
NA	12	NA 12	84.0	85.5	55.8	28.0	93.0	74.2	69.2	67.0	69.6	1.10	88	.94	
CI	15514	HECTOR	87.0	89.0	71.0	49.0	96.0	78.7	87.1	82.0	80.0	.75	81	.90	-
CI	15857	CLARK	83.0	90.0	58.5	56.0	94.0	89.6	90.6	57.0	77.3	.90	86	.93	
MT	31972	KLAGES/SUMM	90.0	87.0	64.3	43.0	94.0	88.1	81.3	70.0	77.2	.96	95	.98	
NA	13	NA 13	80.0	78.5	43.5	13.0	74.0	67.7	75.6	63.0	61.9	1.19	82	.90	
WE	9	WE 9	69.0	77.8	61.3	39.0	81.0	69.1	65.8	52.0	64.4	.76	94	.97	-
MT	853183	BZ AWN BYT/	72.0	84.0	62.3	22.0	85.0	79.8	76.7	60.0	67.7	1.12	90	.95	
WE	83	ONDA	86.0	90.0	77.3	21.0	84.0	81.4	73.9	26.0	67.5	1.39	78	.89	
VD	11576	VDH 115-76	79.0	84.3	67.5	57.0	97.0	86.5	85.6	58.0	76.9	.78	88	.94	-
VD	13875	VDH 138-75	91.0	94.8	63.0	51.0	98.0	87.5	82.5	57.0	78.1	1.02	95	.97	
CI	13827	SHABET	74.0	79.0	43.3	28.0	92.0	78.0	74.3	28.0	62.1	1.37	92	.96	
CI	15773	MOREX	94.0	91.0	62.0	42.0	96.0	72.0	85.8	43.0	73.2	1.18	88	.94	
VD	43277	VDH 432-77	89.0	87.0	58.3	38.0	98.0	91.8	88.5	65.0	77.0	1.16	96	.98	
MT	73708	SCASHABET	79.0	81.5	52.0	29.0	85.0	74.3	69.7	32.0	62.8	1.23	94	.97	
CI	5438	COMPANA	90.0	89.0	69.0	77.0	97.0	87.5	90.7	93.0	86.7	.32	39	.62	-
WE	14	HV 14	91.0	92.3	73.8	71.0	97.0	92.0	86.9	80.0	85.5	.51	90	.95	-
EXPERIMENTAL MEANS			85.1	86.8	64.1	41.6	92.9	82.9	81.8	59.3	74.3	1.00	100	1.00	

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TABLE 21,24 BOZEMAN & INTRASTATE 1981

L.D.	NO	VARIETY NAME	MT18	MT01	MT47	MT07	AVE.	BYX	C.D.	R	T
*** % THIN ***											
JA	9	NA 9	2.0	2.1	2.0	8.0	3.5	.64	34	.58	-.58
CI	15229	STEPTOE	1.0	2.5	2.3	8.0	3.5	.83	53	.73	-.30
IT	312620	SUMMIT/HECT	2.0	10.5	6.7	12.0	7.8	1.43	76	.87	.75
CI	15860	KARLA	2.0	8.2	7.8	3.0	5.3	.51	19	.43	-.65
IT	729	SUMMIT	1.0	7.8	8.6	8.0	6.4	1.26	91	.95	.90
IT	657399	STEPTOE/KLA	1.0	1.3	1.4	2.0	1.4	.13	73	.86	-15.41
CI	10421	UNITAN	2.0	4.0	6.4	9.0	5.4	1.02	83	.91	.05
ID	22872	VDH 228-72	1.0	8.3	7.9	11.0	7.1	1.56	96	.98	2.52
ID	3	MENUE	1.0	3.4	5.4	13.0	5.7	1.55	66	.81	.69
ID	8477	VDH 084-77	.5	6.2	9.5	2.0	4.6	.74	24	.49	-.28
IT	547354	HECTOR/KLAG	1.0	3.5	5.6	6.0	4.0	.82	94	.97	-1.28
ID	11874	VDH 118-74	1.0	4.5	11.0	7.0	5.9	1.25	65	.80	.38
JA	12	NA 12	1.0	7.0	12.0	5.0	6.3	1.12	44	.67	.14
CI	15514	HECTOR	1.0	8.9	4.7	3.0	4.4	.52	18	.42	-.61
CI	15857	CLARK	2.0	3.7	4.2	8.0	4.5	.78	70	.84	-.61
IT	31972	KLAGES/SUMM	2.0	4.3	8.0	4.0	4.6	.58	40	.63	-.83
JA	13	NA 13	8.0	14.7	10.6	9.0	10.6	.33	10	.31	-.91
IE	9	WE 9	7.0	16.6	18.0	18.0	14.9	1.91	95	.98	3.01
IT	853183	BZ AWN BYT/	5.0	8.2	13.1	10.0	9.1	1.03	68	.83	.06
IE	83	ONDA	5.0	5.4	9.3	22.0	10.4	2.05	49	.70	.71
ID	11576	VDH 115-76	.5	4.7	5.2	11.0	5.4	1.63	81	.90	.87
ID	13875	VDH 138-75	.5	4.5	6.6	4.0	3.9	.77	68	.82	-.62
CI	13827	SHABET	3.0	7.0	9.3	14.0	8.3	1.57	86	.93	1.29
I	15773	MOREX	1.0	8.4	3.7	10.0	5.8	1.19	61	.78	.29
ID	43277	VDH 432-77	.5	2.4	4.4	5.0	3.1	.72	92	.96	-1.83
IT	73708	SCASHABET	4.0	11.5	9.2	16.0	10.2	1.66	81	.90	1.17
I	5438	COMPANA	1.0	3.6	4.0	1.0	2.4	.20	11	.34	-2.00
IE	14	HV 14	1.0	.7	4.9	3.0	2.4	.43	36	.60	-1.40
EXPERIMENTAL MEANS			2.1	6.2	7.2	8.3	5.9	1.00	100	1.00	0.00

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REF ID: A
MAR 4 1968

1976

PRIVATE VARIETY NURSERY SUMMARY

PAGE 1

SUM	NO.	SELECTION AND PEDIGREE	AVE YIELD	LOC RANK	LB/A	TEST WEIGHT	% OF CHECK	HD DATE	PLANT HT.	LOGG WHT	HONS	D PROTEIN	% D C	REMARKS
177	RANK													
+	1	18 MINUET OREGON { East Farm Willamet-Vil 5337.1 Klamath Falls Madras }	5152.0	1 6 2	4421.0 5614.4	48.9 0	95 174	6/20	75		C C	C	4-	
					3 1	5975.8	0	126						
+	2	12 VDH 228-72	5130.6	1 5 3	4734.5 5579.8 5141.6	47.7 0 0	101 103 108	20	70		C C	C	4+	
+	3	1 STEPTOE	5039.2	1 7 2	4325.4 5300.7	48.1 0	93 98	6/14	85		C C	C	5+	
					3 4	5491.6	0	115						
4	9	ARAMIR	5003.5	1 2 12	4730.2 5102.7	48.1 0	101 94	19	80		C C	C	5+	
					3 6	5177.6	0	103						
6	2	KLAGES	4945.2	1 3 6	4671.9 5424.4	46.9 0	100 100	6/20	90		C C	C	4	
					11	4739.2	0	100						
+	7	16 PICCOLO	4904.0	1 8 7	4259.3 5361.6	46.3 0	91 99	7/01	90		C C	C	5+	
					3 9	5091.0	0	107						
8	10	CEBECO 7291	4896.0	1 10 10	4145.6 5196.4	48.9 0	39 96	18	75		C C	C	4 HAYED OFF ERL	
					5	5345.9	0	113						
+	9	17 PIRURETTE	4978.1	1 9 14	4159.1 4778.7	48.4 0	89 95	6/27	75		C C	C	4-VERY LATE	
					2 12	5696.4	0	120						
10	13	VDH 395-72	4784.8	1 4 11	4536.5 5172.0	46.4 0	97 95	25	35		C C	C	3 LATE	
					3 12	4F45.9	0	93						

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REF ID:
A1234567890

SUM RANK	NO. SELECTION AND PEDIGREE	AVE YIELD	LOC FANK	LR/A	TEST WEIGHT	% OF CHECK	HD DATE	PLANT HT.	LOG WNT	HONS	PROTEIN	% D.O.C	REMARKS
11	3 FIRLPECKS III	4584.9	1 11	4085.2	48.1	87	6/19	85				0	4+
			2 8	5751.0	0	99						0	
			3 14	4318.5	0	91						0	
12	15 TREBT	4233.6	1 12	3901.3	43.7	81	17	90				0	6
			2 16	4597.1	0	85						0	
			3 15	4302.5	0	91						0	
13	14 HANNCHEN	3963.5	1 13	3384.4	47.6	72	20	100				0	6-
			2 15	4679.3	0	96						0	
			3 16	3926.8	0	81						0	

LUN 10 13 RECORDS IN
LUN 11 13 RECORDS OUT

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SPRING BARLEY
PRIVATE VARIETY NURSERY
EAST FARM LOC 1.

PAGE

K ENTRY VARIETY OR SELECTION	YIELD		TEST WEIGHT	% OF CHECK	DATE	PLANT HEADED	% WNT	% LODG	% HOD	PRO%	% PROTEIN	% ACRE	% LYSINE	REMARKS
	LB/A	KG/HA					HEIGHT	NO	PL	TH	ACRE			
1 12 VDH 229-72	4734.5	5307	47.7	101	20	70					0	0		
2 11 VDH 444-72	4730.2	5303	48.1	101	19	80					0	0		4+
3 2 KLAGES	4671.9	5237	46.9	100	6/20	90					0	0		3 VERY GOOD
4 13 VDH 395-72	4536.5	5035	46.4	97	25	95					0	0		4
5 1 STEPTOE	4507.4	5053	43.4	36	6/14	85					0	0		3 LATE
6 14 MINUET	4421.0	4956	48.9	95	6/20	75					3	0		5+
7 9 ARAMIR	4325.4	4849	48.1	93	19	75					0	0		4-
8 16 PICCOLO	4259.3	4775	46.3	91	7/01	80					0	0		5+
9 17 PIROUETTE	4159.1	4662	48.4	99	6/27	75					0	0		5+
10 10 CEBCO 7291	4145.6	4647	48.9	89	19	75					3	0		4-VERY LATE
11 3 FIRLECKS III	4085.2	4590	49.1	97	6/19	85					0	0		4 HAYED OFF E-
12 15 TREBI	3901.3	4261	43.7	91	17	90					0	0		4+
13 14 HANNCHEN	3384.4	3794	47.6	72	20	100					0	0		6-
											0	0		6-

AVERAGE CHECK YIELDS IN THIS TRIAL

KLAGES 4671.9

RANGE= 4293.4

STANDARD DEVIATION= 640.9

CV= 15%

LSD AT 5% LEVEL= 888.3

REPLICATION MEANS= 4436.1 4073.0 4355.4 429-

These are agronomic
ratings on a scale from
1-10; one is best

8300087



REF CEE/VED
MAP 4 1983

1976

SPRING BARLEY
PRIVATE VARIETY NURSERY
KLAMATH FALLS LOC 2

RANK	ENTRY VARIETY OR SELECTION	YIELD LBS/A	TEST KG/HA	% OF WEIGHT	DATE CHECK	PLANT HEADED	% WNT HEIGHT	% LODG HD	% PL TH	PROV PROTEIN	% D O C	REMARK
1	1 STEPTOE	6278.8	7039	0	116					0	0	
2	20 CI 13334/VG	5998.5	6612	0	109					0	0	
3	19 HH/JULIA-92	5645.7	6329	0	104					0	0	
4	18 MINUET	5614.4	6294	0	104					0	0	
5	12 VDH 229-72	5579.9	6255	0	103					0	0	
6	2-KLAGES	5424.4	6081	0	100					0	0	
7	16 PICCLO	5361.6	6010	0	99					0	0	
8	3 FIRLBECKS III	5351.0	5998	0	99					0	0	
9	9 ARAMIR	5300.7	5942	0	98					0	0	
10	10 CE3FCO 7291	5196.4	5925	0	96					0	0	
11	13 VDH 395-72	5172.0	5798	0	95					0	0	
12	11 VDH 444-72	5102.7	5720	0	94					0	0	
13	21 VANGUARD	4963.4	5564	0	91					0	0	
14	17 PIROUETTE	4778.7	5357	0	88					0	0	
15	14 HANNCHEN	4679.3	5246	0	86					0	0	
16	15 TREBI	4597.1	5153	0	85					0	0	

AVERAGE CHECK YIELDS IN THIS TRIAL

KLAGES 5424.4

AVERAGE = 5309.0

STANDARD DEVIATION = 624.8 CV = 12% LSD AT 5% LEVEL = 865.9 REPPLICATION MEANS = 5112.7 5370.8 4391.

8300087



REF. CIRCULACION
MAR 1988

1976

SPRING BARLEY
PRIVATE VARIETY NURSERY
MADRAS LOC 3

RANK	ENTRY	VARIETY OR SELECTION	YIELD LB/A	YIELD KG/HA	TEST WEIGHT	% OF CHECK	DATE	PLANT HEADED	% WNT			PROV PL	% D O C	REMAR
									% LOOG	% HD	% PL			
1	15	MINUET	5975.8	6699	0	126			0	0	0			
2	17	PIROURETTE	5696.4	6386	0	120			0	0	0			
3	20	CI 13334/VG	5584.9	6261	0	118			0	0	0			
4	9	ARAMIR	5491.6	6156	0	116			0	0	0			
5	10	CEBECO 7291	5345.9	5993	0	113			0	0	0			
6	11	VDH 444-72	5177.6	5804	0	109			0	0	0			
7	19	HH/JULIA-92	5170.5	5796	0	109			0	0	0			
8	612	VDH 223-72	5141.6	5764	0	108			0	0	0			
9	16	PICCOLO	5091.0	5707	0	107			0	0	0			
10	21	VANGUARD	4772.5	5350	0	101			0	0	0			
11	2	KLAGES	4739.2	5313	0	100			0	0	0			
12	13	VDH 395-72	4645.9	5208	0	98			0	0	0			
13	1	STEPTOE	4605.5	5163	0	97			0	0	0			
14	3	FIRLBECKS IIT	4319.5	4841	0	91			0	0	0			
15	15	TREBI	4302.5	4823	0	91			0	0	0			
16	14	HANNCHEN	3926.8	4290	0	91			0	0	0			

AVERAGE CHECK YIELDS IN THIS TRIAL

KLAGES 4992.9 STANDARD DEVIATION= 826.2 CV= 17% LSD AT 5% LEVEL= 1145.1 REPLICATION MEANS= 5593.5 4952.8 4524

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PRIVATE VARIETIES NURSERY

USA Oregon 1977

Entry #	Entry Name	REDMOND			KLAMATH FALLS						CORVALLIS			
		Steptoe %	Bu/Acre	Test Weight	% of Steptoe	YIELD bu/acre	Test Weight	(cm) Height	Ave of 2 reos	Lodging %	Heading Date (June)	(cm) Height	% Lodging	Leaf Rust
1	Klages	94	76	49.8	91	86	44.8	82.5	45	14	110	40	TOMR*	
2	Steptoe	100	81	47.2	100	95	44.3	95.0	70	8	105	90	TMR	
3	Hannchen	73	59	48.6	76	72	46.0	82.5	97.5	14	125	95	TOMR	
4	Trebi	91	74	46.0	77	73	42.5	87.5	99	10	115	100	ZOMS	
10	Mazurka	106	86	50.2	78	74	45.6	90.0	96.5	10	110	95	TMR	
11	VDH 444-72	101	82	49.5	82	78	46.3	82.5	92.5	10	110	85	TMR	
12	VDH 228-72	116	94	48.9	93	88	47.1	75.0	70	12	100	50	TMR	
13	Piccolo	90	73	47.6	93	88	44.7	75.0	62.5	very late	100	0	TMR	
14	Pirouette	105	85	50.0	84	80	48.2	72.5	94	12	105	20	TMR	
15	Minuet	105	85	48.9	91	86	47.9	75.0	50	12	110	0	0	
17	VDH 261-70-A	102	83	47.6	82	78	43.5	72.5	65.0	12	100	60	0	
18	VDH 444-72	102	78	50.3	68	65	43.6	77.5	95	10	105	50	TMR	
19	VDH 281-72	100	81	49.1	86	82	44.6	80.0	80	10	110	40	0	
20	VDH 140-73	91	74	48.4	81	77	45.3	80.0	98	12	100	70	TMR	
21	VDH 046-74	118	96	46.7	91	86	45.6	72.5	96.5	10	90	85	0	
22	VDH 267-72	111	90	47.2	97	92	46.1	82.5	97.5	10	100	99	5MR	

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RESULTS OF THE PRIVATE VARIETY SPRING BARLEY NURSERY GROWN AT FOUR LOCATIONS IN OREGON IN 1979

	CORVALLIS						MADRAS		ONTARIO			KLAMATH FALLS			ALL LOCATIONS
	Yield (Bu/A)	Test Wt (lbs/Bu)	Heading (from 6/1)	Height (cm)	Plump (%)	Thin (%)	Yield (Bu/A)	Height (cm)	Yield (Bu/A)	Test Wt (lbs/Bu)	Heading (from 6/1)	Yield (Bu/A)	Height (cm)	Lodging (%)	
LUD	83	55.9	7	65	70	1	81	56	61	52.1	8	103	105	80	82
RPB 374-71	84	55.6	5	75	45	3	75	58	66		7	92	110	80	79
NAPB-5	98	55.7	5	70	25	4						72	105	70	85 ¹
NAPB-6	93	55.3	5	70	43	4						80	105	80	87 ¹
MINUET	90	55.8	6	75	58	3	74	58	60		9	96	100	25	80
MELODY	98	54.5	10	65	46	5	85	53	72	49.2	10	78	95	80	83
VDH 228-72	89	55.0	8	70	54	2	72	58	66		10	71	105	80	75
VDH 118-74	90	54.7	8	75	52	3	81	58	64		8	85	105	80	80
VDH 257-73G	105	54.6	6	75	43	4	81	53	57		7	78	95	70	80
VDH 138-75	99	54.8	7	75	42	3	73	56	55		8	82	95	90	77
OSB 73062-153	97	55.7	8	70	54	2	74	58	55		8	79	105	80	76
OSB 71130-1E4	91	54.8	8	65	65	2	92	61	64		13	98	90	80	86
STEPTOE	93	52.6	3	80	69	2	89	58	60	50.0	4	120	100	5	91
KLAGES	92	55.7	6	85	24	3	71	61	68	51.6	8	82	105	60	78
OSB 74206-2S-05	71	51.9	5	80	46	2	68	66	50	47.6	9	89	100	90	70
MINAK	88	54.8	14	70	25	3	91	64	48		15	55	100	30	71
KOMBAR									51	50.9	13				51 ¹
NAPB 8												119	115	50	119 ¹
NAPB 9												134	105	70	134 ¹
CV(%)	9						10		14			23			12
MEAN=(Bu/A)	91						79		60			90			79
LSD (Bu/A)	12	13%					12	15%	13	22%		31	34%		
Fentry	3.78						4.09		2.77			3.59			1.30 NS
Flocation															25.77

¹Not grown at all locations; therefore data not used in computing analysis of variance over all locations

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26 USA Oregon

PVN CORVALLIS

	Yield lbs/acre	TW	L Rust	Heading
1. Lud	3840	53	5 s	6/19
2. Summit	4128	55.5	t ms	6/19
3. NAPB 8	4752	51.5	20 ms	6/11
4. NAPB 9	4560	52.2	15 ms	6/10
5. NAPB 16	4080	54.7	15 s	6/16
6. NAPB 17	4368	53.7	5 s	6/18
7. Minuet	3216	53.5	5 s	6/20
8. Melody	4464	54.8	5 s	6/20
9. VDH228-72	3984	56.0	20 s	6/18
10. VDH118-74	4080	55.3	5 s	6/21
11. VDH138-75	4368	55.0	5 s	6/20
12. VDH1115/76	4416	54.9	5 s	6/18
13. VDH168/76	4176	55.6	t	6/18
14. Klages	4032	54.8	15 s	6/21
15. Triumph	4512	55.5	t ms	6/20
16. Gus	4320	53.3	40 s	6/17
17. Gerka	3216	54.0	30 s	6/23
18. Harkra	3792	56.3	10 ms	6/21
19. Steptoe	4560	51.8	10 ms	6/12

SD = 288

CV = 8%

 \bar{X} = 4128

LSD = 480 11.6 %



8300087

PVN KLAMATH FALLS 1980

Yield

lbs/acre

1. Lud	5136	104
2. Summit	4800	17
3. NAPB 8	6000	121
4. NAPB 9	6048	122
5. Minuet	5040	102
6. Melody	4992	101
7. VDH228-72	4416	89
8. VDH118-74	4608	95
9. VDH138-75	3936	80
10. VDH1115-76	4896	99
11. VDH168-76	4272	86
12. Klages	5040	102
13. Triumph	4896	99
14. Gus	4944	100
15. Gerka	4080	83
16. Harkra	3792	77
17. Steptoe	6096	123

SD = 720

CV = 14%

$\bar{X} = 4944$

LSD = 379.8 8%?



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PVN MADRAS 49 SD

Yield
lbs/acre

1. Lud	4176	94
2. Summit	4032	90
3. NAPB 16	3600	81
4. NAPB 17	4032	90
5. Minuet	4224	95
6. Melody	5136	115
7. VDH228-72	4464	100
8. VDH118-74	4368	98
9. VDH138-75	4416	99
10. VDH1115-76	4656	104
11. VDH168-76	4560	102
12. Klages	3936	88
13. Triumph	4896	110
14. Gus	4656	104
15. Steptoe	5232	117

SD = 336

CV = 7%

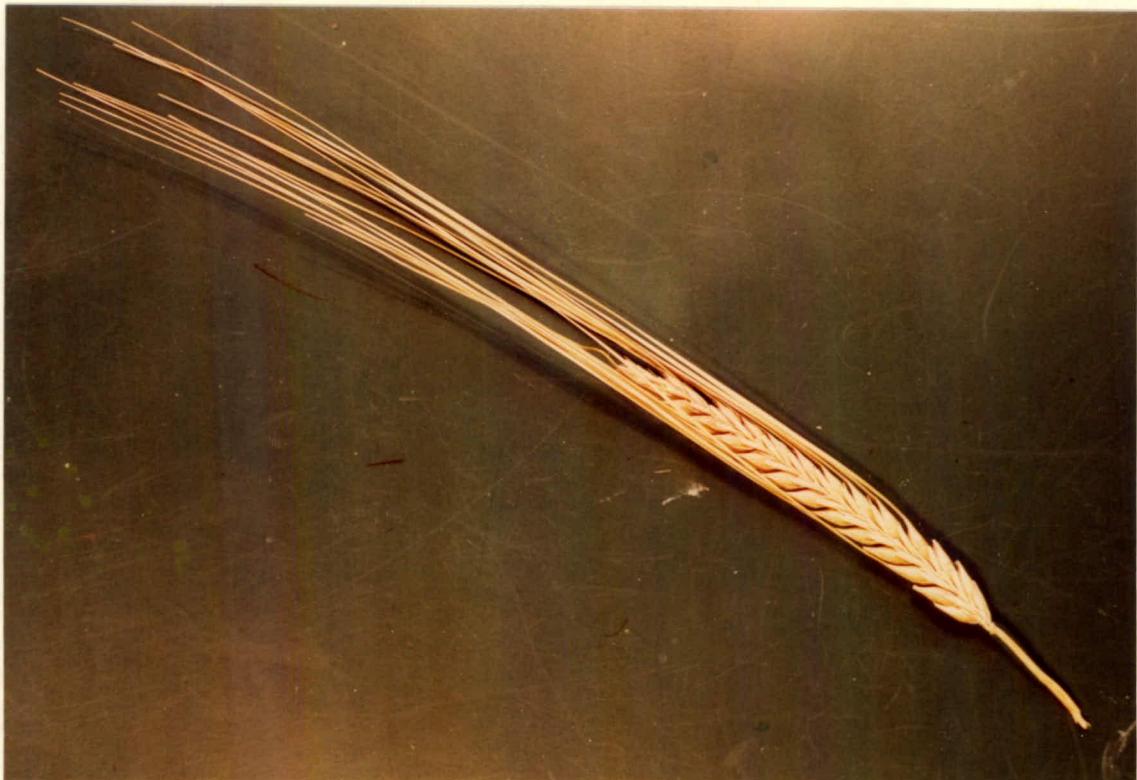
 \bar{X} = 4464

LSD = 480 10.8%



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SPRING BARLEY VARIETY "PISTON".





REF.
MAY 4 1963